

# COMMONWEALTH OF AUSTRALIA

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Family Name	
Given Names	
Student Number	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
Teaching Period	Semester 2, 2015

FINAL EXAMINATION	DURATION				
<b>PSY347 – Advanced Research Design and Analysis</b>	<table> <tr> <td>Reading Time:</td><td><b>10</b> minutes</td></tr> <tr> <td>Writing Time:</td><td><b>180</b> minutes</td></tr> </table>	Reading Time:	<b>10</b> minutes	Writing Time:	<b>180</b> minutes
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Writing Time:	<b>180</b> minutes				

### INSTRUCTIONS TO CANDIDATES

The examination has **three** sections

<b>Section A:</b> Suggested Time: 60 minutes	<b>Multiple Choice Questions:</b> Answer ALL (60) questions 30 Marks
<b>Section B:</b> Suggested Time: 60 minutes	<b>Short Answer Questions:</b> Answer 6 of 6 questions 30 Marks
<b>Section C:</b> Suggested Time: 60 minutes	<b>Short Essay Questions:</b> Answer 2 of 2 questions 40 Marks

Please ensure that your name and student number are clearly indicated on your Answer Sheets and at the top of this examination paper.

- 1.2 Note that questions **ARE NOT** of equal value.
- 1.3 Read **ALL** questions carefully.
- 1.4 Do not commence writing until instructed to do so.

### EXAM CONDITIONS

This is a CLOSED BOOK examination

Any calculator is permitted

No handwritten notes are permitted

No dictionaries are permitted

Answer on the supplied examination material/s only

ADDITIONAL AUTHORISED MATERIALS	EXAMINATION MATERIALS TO BE SUPPLIED
No additional printed material is permitted	1 x 8 Page Book 1 x 4-Multiple Choice Answer Sheet

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**Section A**  
**Multiple Choice Questions**  
**Total No of Marks for this section: 30 Marks**

This section should be answered on the Answer Sheet provided. Please ensure that your name and student number have been written on the Answer sheet and placed in the completed answer Booklet.

Marks for each question are indicated. Suggested Time allocation for Section A: 60 mins

**Section B**  
**Short answers**  
**Total No of Marks for this section: 30 Marks**

This section should be answered in the Answer Booklet provided.

Marks for each question are indicated. Suggested Time allocation for Section B: 60 mins

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**Question 1**

Briefly describe the difference between an experimental design and correlational study.

**(Marks: 5)**

**Question 2**

What is the major advantage of using a Two-Way (or factorial type) ANOVA compared to conducting separate One-Way ANOVAs ?

**(Marks: 5)**

**Question 3**

Briefly describe one of the assumptions that should be satisfied before interpreting an exploratory factor analysis and how it is checked.

**(Marks: 5)**

**Question 4**

Describe how effect size and power are different?

**(Marks: 5)**

**Question 5**

Briefly describe two techniques a researcher may use to decide on the number of factors to retain after conducting an Exploratory Factor Analysis.

**(Marks: 5)**

**Question 6**

What tests can be employed to test the assumption of equality of variance?

**(Marks: 5)**

**Section C**  
**Short answers - Interpretation of Results**  
**Total No of Marks for this section: 40 Marks**

This section should be answered in the Answer Booklet provided.

Marks for each question are indicated. Suggested Time allocation for Section C: 60 mins

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**Question 1 of 2** (20 Marks)

You have given your research assistant a data set to analyse. The output from this analysis is attached. Your task is to report the results in APA format.

When answering this question, keep in mind you will need to state what analysis was conducted and interpret the output. Note there might be materials that your research assistant has not provided you with and you need to mention what these other requirements might be.

**Ensure you read ALL elements of this analysis which goes across several pages**

<b>Between-Subjects Factors</b>			
		Value Label	N
Experience Level	1.00	Low	15
	2.00	High	15
	1.00	RET	10
Therapy Type	2.00	BT	10
	3.00	PCT	10

<b>Descriptive Statistics</b>				
Dependent Variable: Mental Health Score				
Experience Level	Therapy Type	Mean	Std. Deviation	N
Low	RET	55.0000	6.08276	5
	BT	61.6000	6.87750	5
	PCT	46.4000	8.17313	5
	Total	54.3333	9.20145	15
High	RET	62.6000	7.43640	5
	BT	59.4000	3.28634	5
	PCT	69.4000	6.46529	5
	Total	63.8000	7.03258	15
Total	RET	58.8000	7.55425	10
	BT	60.5000	5.21217	10
	PCT	57.9000	13.97180	10
	Total	59.0667	9.37691	30

**Levene's Test of Equality of Error Variances<sup>a</sup>**

Dependent Variable: Mental Health Score

F	df1	df2	Sig.
.729	5	24	.608

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

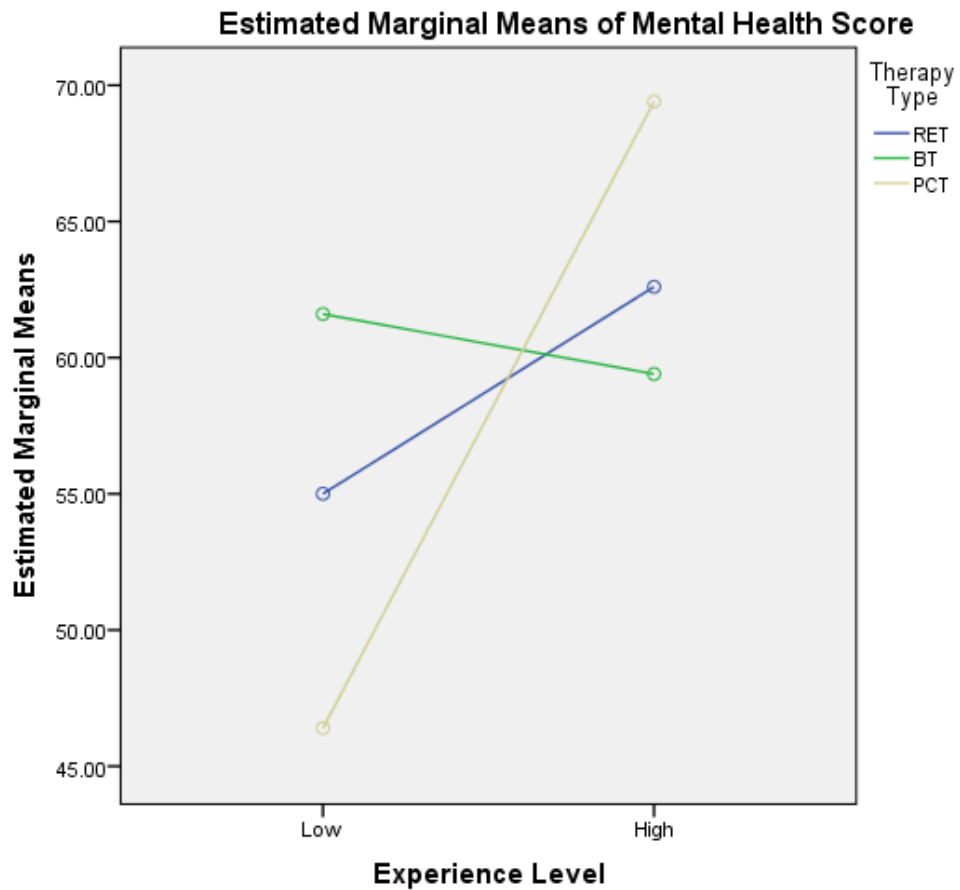
a. Design: Intercept + Experience + TherapyType + Experience \* TherapyType

**Tests of Between-Subjects Effects**

Dependent Variable: Mental Health Score

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1513.867 <sup>a</sup>	5	302.773	7.014	.000	.594
Intercept	104666.133	1	104666.133	2424.698	.000	.990
Experience	672.133	1	672.133	15.571	.001	.393
TherapyType	34.867	2	17.433	.404	.672	.033
Experience * TherapyType	806.867	2	403.433	9.346	.001	.438
Error	1036.000	24	43.167			
Total	107216.000	30				
Corrected Total	2549.867	29				

a. R Squared = .594 (Adjusted R Squared = .509)





You have given your research assistant a data set to analyse. The output from this analysis is attached. Your task is to report the results in APA format.

When answering this question, keep in mind you will need to state what analysis was conducted and interpret the output. Note there might be materials that your research assistant has not provided you with and you need to mention what these other requirements might be.

**Ensure you read ALL elements of this analysis which goes across several pages**

Descriptive Statistics			
	Mean	Std. Deviation	N
Total Subjective Wellbeing	25.09	6.413	171
Extraversion	26.02	6.758	171
Agreeableness	34.40	5.440	171
Conscientiousness	32.95	6.470	171
Neuroticism	22.46	7.677	171
Openess	35.10	6.803	171

Model Summary <sup>b</sup>									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.594 <sup>a</sup>	.352	.333	5.238	.352	17.959	5	165	.000

a. Predictors: (Constant), Openess, Extraversion, Agreeableness, Conscientiousness, Neuroticism

b. Dependent Variable: Total Subjective Wellbeing

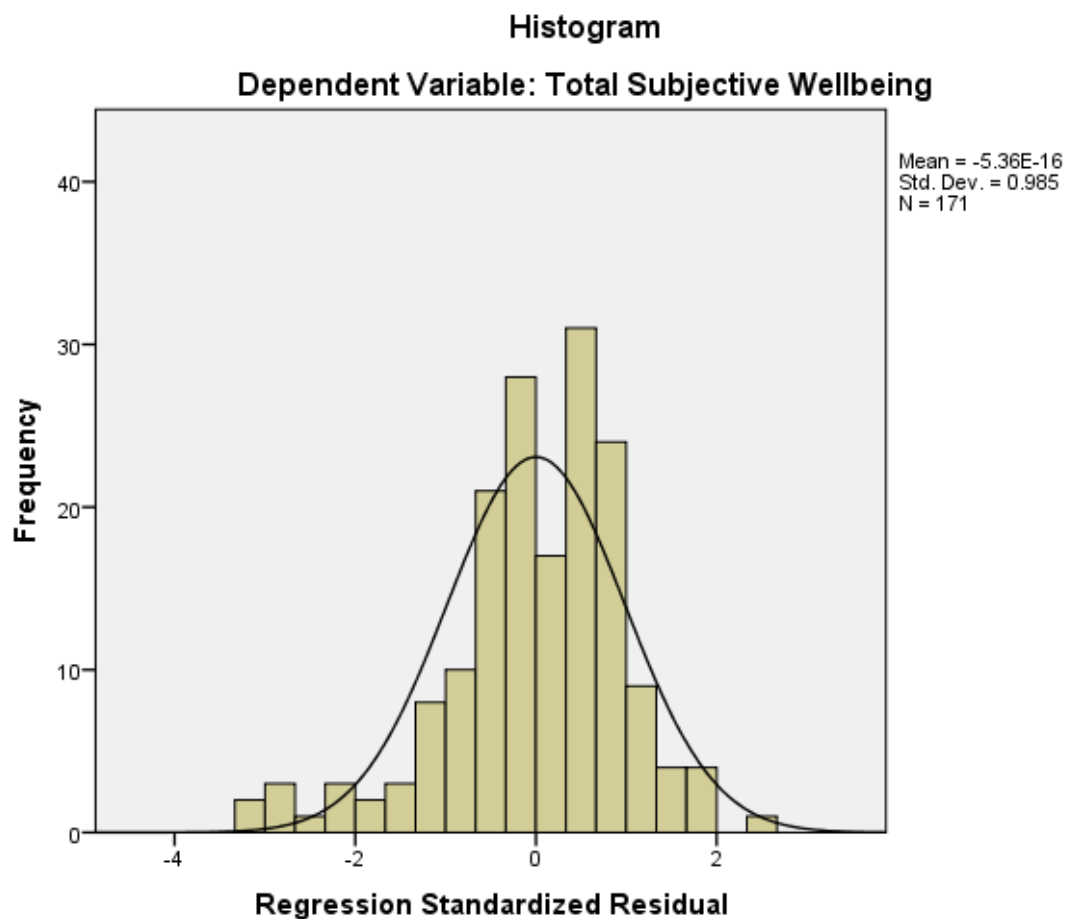
ANOVA <sup>a</sup>					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2463.995	5	492.799	17.959	.000 <sup>b</sup>
1 Residual	4527.689	165	27.441		
Total	6991.684	170			

a. Dependent Variable: Total Subjective Wellbeing

b. Predictors: (Constant), Openess, Extraversion, Agreeableness, Conscientiousness, Neuroticism

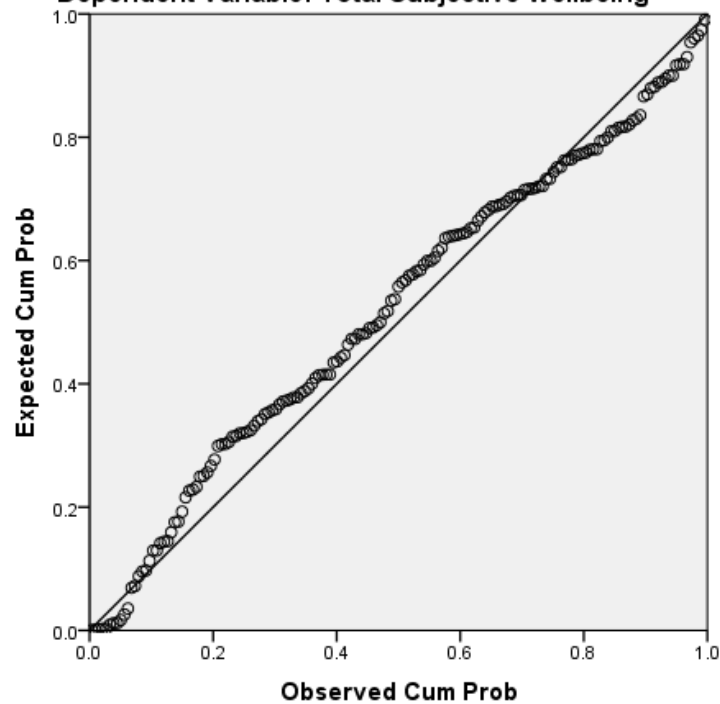
Coefficients <sup>a</sup>								
Model	Unstandardized		Standardized	t	Sig.	Correlations		
	Coefficients		Coefficients			Zero-	Partial	Part
	B	Std. Error	Beta			order		
(Constant)	18.676	4.710		3.965	.000			
Extraversion	.201	.064	.212	3.171	.002	.373	.240	.199
Agreeableness	.078	.084	.067	.935	.351	.302	.073	.059
Conscientiousness	.242	.071	.244	3.398	.001	.447	.256	.213
Neuroticism	-.245	.062	-.293	-3.962	.000	-.470	-.295	-.248
Openess	-.114	.060	-.121	-1.907	.058	-.048	-.147	-.119

a. Dependent Variable: Total Subjective Wellbeing



**Normal P-P Plot of Regression Standardized Residual**

**Dependent Variable: Total Subjective Wellbeing**



**Scatterplot**

**Dependent Variable: Total Subjective Wellbeing**

